CLOTH FOR A DRY MOP.

TECHNICAL FIELD:

The present invention concerns a mop fabric that is designed for attachment to a mop handle and to be used to clean dry, soiled surfaces, in contrast to regular mop fabric, which is designed for immersion in a water-based washing medium and is used wet.

BACKGROUND:

Textiles have always been used for cleaning and removing dirt from soiled surfaces. These textiles have been available in various qualities, but mostly in the form of weaves. In recent times, they have consisted of fibres of natural origin such as cotton, artificial fibres such as polyamide and/or polyester, or most commonly blends of such fibres. These textiles are most often woven or knitted. It is usual for cleaning fabrics to have different-sized loops, made from various materials, which protrude from the ground fabric. An example of the type of fabric that is designed to be attached to a mop handle and used wet is described in Swedish patent no. 94 03398-2.

THE TECHNICAL PROBLEM:

As a rule, satisfactory results are obtained with regard to the actual cleanliness of a floor when a wet mop is used to clean it. However, a film of moisture remains on the floor for some time and if anyone walks on the floor

soon after it has been cleaned, it will quickly become soiled again. At the same time, the moisture adheres to the soles of the shoes and could soil other, clean surfaces if they are trodden on. In addition, there is always the inconvenience of having to use a bucket or similar container in which to carry the washing liquid when the wet-cleaning method is used. The washing liquid also consists of a mixture of water and chemical detergent, which are costly and can sometimes cause allergic reactions as well as an unpleasant odour. Water "wears out" the floor material, triggers emissions from the material, seeps into cracks and uneven surfaces and causes the growth of bacteria and mildew.

Dirt emulsifies in water that is used for cleaning. If any of this water is left on the floor, the dirt particles will remain behind once the water has evaporated. Quite simply, the floor will not be clean.

THE SOLUTION:

There has therefore always been a strong desire to be able to clean a floor or similar surface by using as dry a cleaning method as possible. As per the invention being presented, a dry-mop fabric has now been produced for attachment to a mop handle and to be used to clean dry, soiled surfaces. This dry-mop fabric is distinguished by it consisting of micro- or ultramicro-fibre or filament with a count of 0.60-0.25 DTEX per fibre or filament and by it being woven or knitted with loops on one or both sides of the fabric, with a loop height of approximately 3-9 mm.

As per the invention, the loops are made of polyamide or polyester fibre in various proportions, or a blend of these fibres in one and the same loop.
As per the invention, the cross-section of the filament should not be round, but preferably have as rectangular a shape as possible, with flat sides.

DETAILED DESCRIPTION OF THE INVENTION:

The dry-mop fabric, as per the invention being presented, is designed for attachment to any mop handle and to be used to clean soiled surfaces. The mop handle is not included in the invention; any mop handle can be used. It is of course also possible to use this dry-mop fabric without a handle by simply using the fabric on its own to clean dry, soiled surfaces by hand. If there is any water on the surface, it is naturally also possible to use the fabric, as per the invention, to the same good effect - especially since the fabric is extremely absorbent.

The fabric consists of a ground fabric with protruding loops on one or both sides. The fabric can be woven or preferably knitted, so that the loops are firm and cannot be pulled out. The material comprising the loops should consist of micro- or ultramicro-fibre or filament with a count of 0.60-0.25 DTEX per fibre or filament. Dtex is a unit of measurement, where 1 DTEX represents one fibre with a length of 1 000 metres and a weight of 1 gram.

As per the invention, the material in the fibres is synthetic and the loops may consist of two different materials, i.e. a number of the fibres could be

polyamide, while the remainder could be polyester, for instance. As per the invention, it is also possible that the individual loops could consist of a blend of polyamide and polyester as well as contain natural fibres.

As per the invention, the cross-section of the filaments should not be round, but have flat sides, preferably slanting and with as rectangular a shape as possible, whereby the fibre surface will be as large as possible.

As per the invention, the loops should be at least 3 mm and no more than 9 mm in height. The most advantageous measurement is in the region of 6-8 mm. Each loop must consist of a large number of fibres. The closeness of the loops, i.e. the number of loops per unit of area, the yarn thickness and the loop height must be proportioned so that when the fabric is pressed against a surface underneath it the loops remain upright or lie at an angle of no more than 45° to an imaginary vertical line. The force indicated in this instance is the normal weight of the mop handle plus some strength exerted by the operator, who holds the mop and moves it forwards. This maximum angle means that the part which is in contact with the surface underneath largely consists of transverse fibres. Because of the position, flatness and closeness of the fibres across the entire surface of the mop, a propulsive effect on the dirt particles or other impurities arises. The particles are attracted to and accumulate on the fibre surfaces, as well as between the fibres and inside the loops. The relatively high loop height combined with the collectively large fibre

surface contributes to its ability to accumulate a large quantity of grime or dirt particles.

The cleaning action is highly effective because of the microfibres' extreme softness, the length and closeness of the loops and the count and surface dimensions of the fibres. Even though the fibres are soft and the loops are long, the loops will still not be flattened because they support each other owing to their closeness. Since every surface is more or less uneven and the fibres in the mop fabric adapt to the unevenness of the surface underneath and force their way into even extremely small hollows, the fabric can also remove and accumulate the very small particles that are deposited in these uneven areas.

By combining the various parameters as per the invention being presented, an extremely high-quality dry-mop fabric with extensive cleaning ability has been produced.

Because of its great ability to absorb liquids and particles it should, in principle, also be possible to use the mop for drying up liquid, with simultaneous absorption of both the water and any emulsified dirt contained in it.

The invention is not limited to the design described, but can be varied in different ways within the scope of the patent claims.